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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,574	11/21/2003	Jac-Hyeong Kim	1293.1983	9399

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EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,574	KIM, JAE-HYEONG	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 9, 11, 12, 15, 16 and 18-22 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5, 7, 8, 10, 13, 14 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/21/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 6, 9, 11, 12, 15, 16 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya (US Patent No. 6, 078, 460) in view of Yoshimoto et al. (US Patent No. 6, 229, 784).

Regarding Claim 18, Moriya teaches a system comprising:

A controller coupled to the heads by a read/write channel and a preamplifier (Fig.

1, Element 14, which is a processor that controls the processes in the disk drive unit.);

A memory coupled to the controller (Fig. 1, Element 19);

A host interface coupled to the controller and the read/write channel (Fig. 1, Element 18); and

A voice coil motor driver supplying a driving current to the voice coil and coupled to the controller (Fig. 1, Elements 7 and 17);

However, Moriya does not explicitly teach wherein the controller accesses a disk drive on the hard disk drive using physical track addresses read from disks on the hard disk drive and mapping table stored in memory. Yoshimoto et al. teaches a disk drive device in which a

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mapping table (As seen in Fig. 5, of Yoshimoto et al. and Col. 8, L. 31 to Col. 9, L. 17, wherein Yoshimoto et al. teaches a table in which logical and physical values are recorded in order to ease the medium during a seek operation, which Yoshimoto sets as an example in the invention. See Also Col. 10, L. 22-40 of Yoshimoto et al.) illustrates the deviation or offsets of the tracks, using different addresses instead of its physical address. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Moriya's invention with the teaching of Yoshimoto et al. in order to provide formatted disk in which its addresses are easier to locate (See Summary Yoshimoto et al.).

Regarding Claim 19, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 18. The combination further teach wherein when a disk accessing operation is requested, the controller obtains the physical track address of a disk on which a head is positioned to access by applying a track address deviation of the disk stored in the memory to a virtual track address of the disk (Col. 4, L. 16-17 and L. 47-64 of Yoshimoto et al., wherein Yoshimoto et al. teaches taking different sectors in the disk and placing a different address other than its physical address, herein giving it a virtual address, in order for those sectors being grouped for different functions in the disk, like for example WO (write once area), among other functions. See Also Col. 10, L. 22-40 of Yoshimoto et al.).

Method claims (1, 6, 11 and 15) are drawn to the method of using the corresponding the combination of apparatus claimed in claims (18 and 19). Therefore method claims (1, 6, 11 and 15) correspond to the combination of apparatus claims (18 and 19) and are rejected for the same reasons of obviousness as used above.

Regarding Claim 20, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 18. The combination further teach wherein the controller is a digital signal processor, a microprocessor, or a microcontroller (Fig. 17, Element 33 of Yoshimoto et al.).

Regarding Claim 21, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 18. The combination further teach wherein the controller supplies a control signal to the read/write channel to read data from, or write data to, the disk in the disk drive (Col. 14, L. 11-13 of Yoshimoto et al.).

Regarding Claim 22, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 18. The combination further teach wherein the host interface includes a buffer memory and a control circuit interacting with a computer (Col. 14, L. 3-5, wherein it teaches the use of a ROM and RAM.).

Regarding Claims 4 and 9, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 1 and 6, respectively. The combination further teach wherein defining an available data zone (See Fig. 5, wherein Yoshimoto et al. teaches a formatting of the data tracks, displaying the available sectors for recording.).

Regarding Claim 12, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 11. The combination further teach wherein the arbitrary locations are over the middle areas corresponding disk surfaces (See Fig. 5 of Yoshimoto et al., wherein it teaches that the entire disk, including the middle areas, are included in the track assignment.).

Regarding Claim 16, the combination of Moriya and Yoshimoto et al. teach all the limitations of Claim 15. The combination further teach wherein calculating physical track addresses includes obtaining the physical track address of the disk on which a head is positioned

to access by applying a track address deviation of the disk stored in the memory to a virtual track address of the disk (Col. 4, L. 16-17 and L. 47-64 and Col. 10, L. 22-40 of Yoshimoto et al.).

Allowable Subject Matter

3. Claims 2, 3, 5, 7, 8, 10, 13, 14 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claims 2 and 7, the primary reason for allowable subject matter is the inclusion of the limitation wherein the reference head is the head having a physical address whose absolute value is the least among read physical addresses of tracks or sectors on which the heads of a head assembly are positioned.

Regarding Claim 13, the primary reason for allowable subject matter is the inclusion of the limitation wherein the reference head is the head having a physical track address whose absolute value is the smallest among the physical track addresses recorded in the mapping table.

Regarding Claim 14, the primary reason for allowable subject matter is the inclusion of the limitation wherein the setting the deviation of the reference head as a zero value is by adding an identical constant to the physical track addresses accessed by the respective, individual heads.

Regarding Claims 5 and 10, the primary reason for allowable subject matter is the inclusion of the limitation wherein the available data zone ranges from the first track from the outer boundary of a disk accessed by the reference head to the last track at the inner boundary of a disk accessed by a head having the greatest physical address deviation.

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Regarding Claim 17, the primary reason for allowable subject matter is the inclusion of the limitation wherein the virtual track address of the disk is substantially equal to the virtual track address of a reference disk.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gpr

Aug 16, 2005.



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